

Service Manual

8Track Stereo Deck
RS-805US

8-Track Stereo Recording/Playback Cartridge Deck



This is the Service Manual of Model RS-805US for PX.

RS-817S MECHANISM SERIES

Specifications (Catalog specifications for sales)

Power requirement:	AC; 90~109, 110~125, 200~219, 220~250V, 50/60 Hz	Inputs:	MIC; 0.28mV applicable microphone impedance 200~600 Ω (recommended microphone RP-8135)
Track system:	8-track 2-channel stereo recording and playback	Outputs:	LINE; 50mV/100K Ω LINE; 0.6V (at 0 VU) load impedance 50K Ω over
Recording system:	AC bias, AC erase		HEADPHONES; output level 45mV/8 Ω (at 0 VU)
Operation:	Cartridge slide-in system with Pana-Ject/ continuous play mechanism and remote control eject/program	REC/P.B connection:	DIN 5P terminal
Tape speed:	3-3/4 ips.	Motor:	1-motor system
Wow and flutter:	0.17% (WRMS)	Head:	1-head system
Frequency response:	30~13,000 Hz	Fast forward time:	Approx. 480 seconds with 300 feet tape
Signal to noise ratio:	45 dB	Program time:	1 hour stereo recording with 300 feet tape
		Dimensions:	12-1/2"(W) \times 4-3/8"(H) \times 9-3/4"(D)
		Weight:	8-1/8 lbs.

Specifications are subject to change without notice for further improvement.

Panasonic®

Panasonic Tokyo
Matsushita Electric Industrial Co., Ltd.
8-2, 4-chome, Shiba, Minato-ku, Tokyo 108 Japan

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

LOCATION OF PARTS

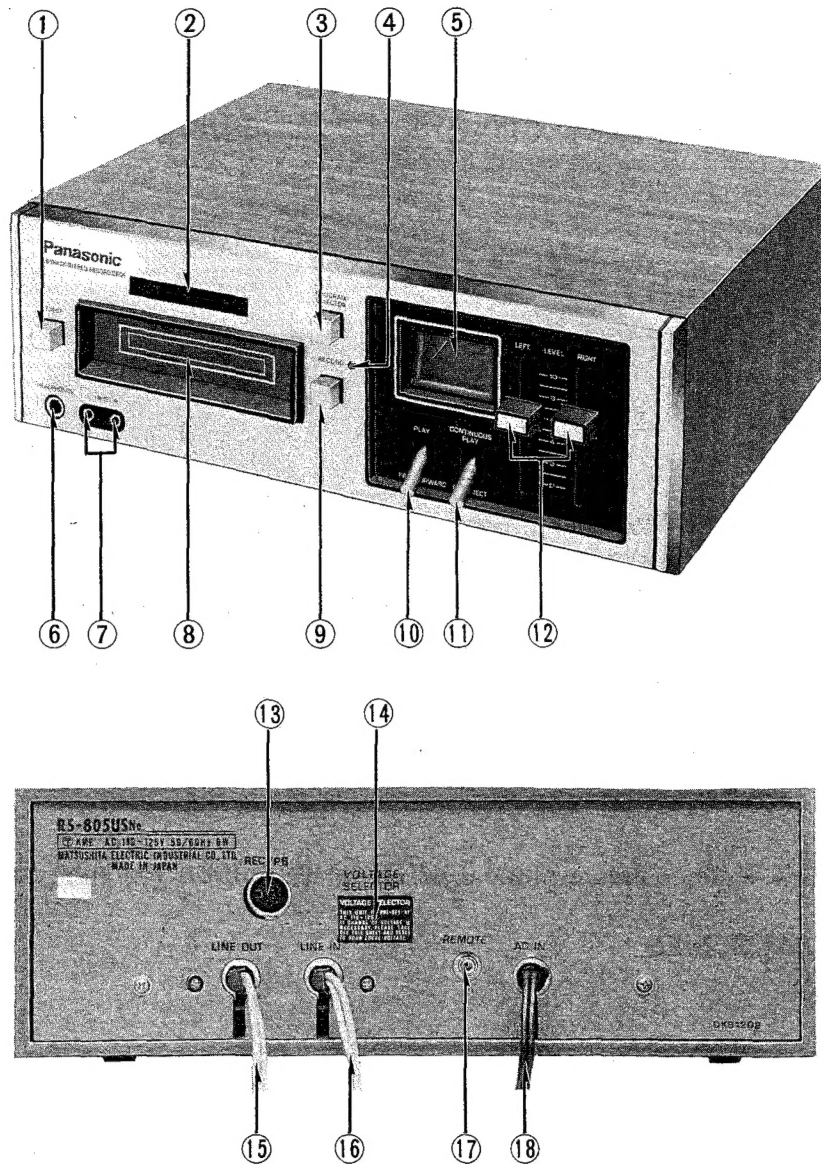


Fig. 1

- | | |
|-----------------------|-------------------------------------|
| ① Ejection button | ⑩ Play/fast forward control |
| ② Program indicator | ⑪ Automatic ejection switch |
| ③ Program selector | ⑫ Level adjustment controls |
| ④ Recording indicator | ⑬ Record/playback connection socket |
| ⑤ Level meter | ⑭ Voltage selector |
| ⑥ Headphones jack | ⑮ Line output cords |
| ⑦ Microphone jacks | ⑯ Line input cords |
| ⑧ Tape slot | ⑰ Remote control jack |
| ⑨ Record button | ⑱ Power cord |

DISASSEMBLY INSTRUCTIONS

HOW TO REMOVE BODY CASE AND BACK BOARD

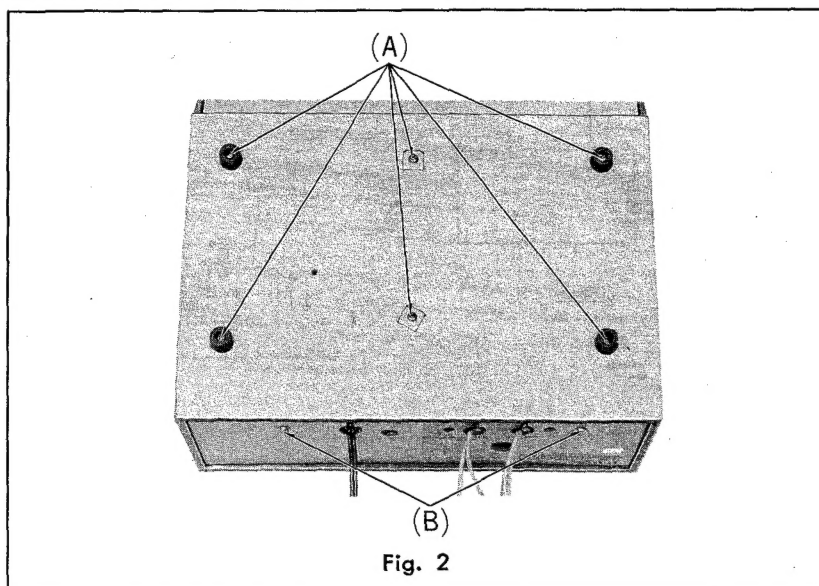


Fig. 2

1. Remove 6 body case holding screws (A) and 2 back board holding screws (B).
2. Then body case and back board can be removed.

HOW TO REMOVE FRONT PANEL

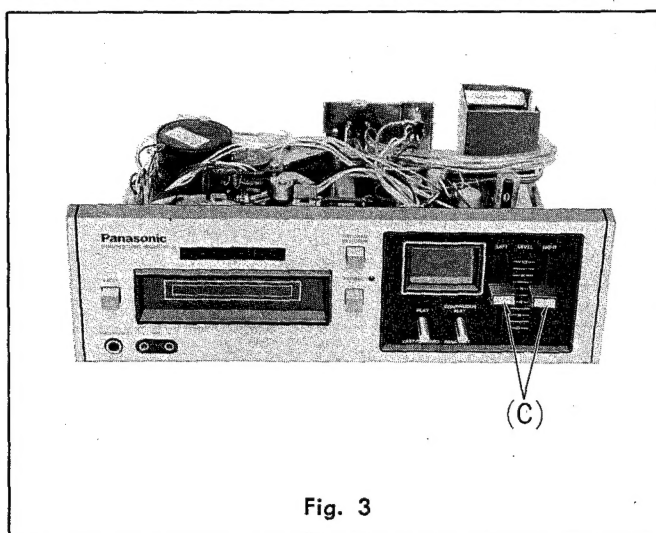


Fig. 3

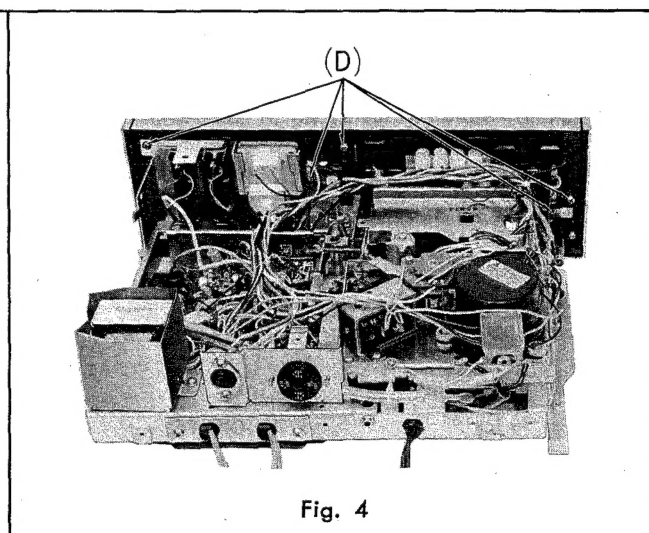


Fig. 4

1. Pull out 2 volume knobs (C).
2. Remove 5 front panel holding screws (D).
3. Then front panel can be removed.

MECHANICAL ADJUSTMENTS

PROGRAM SELECTION

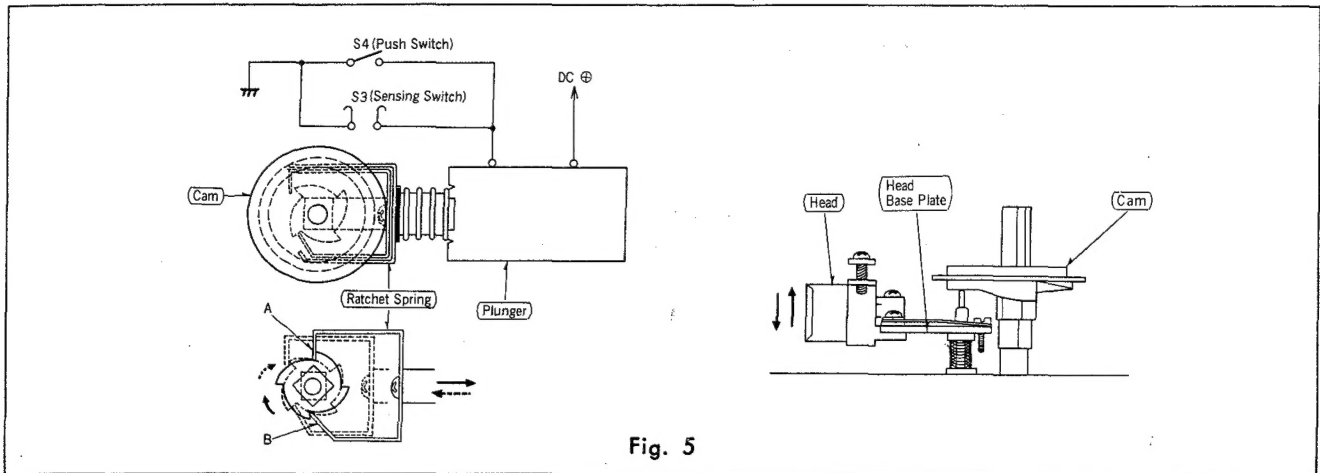


Fig. 5

Manual selection

1. When the push switch is pressed, the plunger operates.
2. Plunger pulls the ratchet spring to momentary then it returns to the left.
3. Ratchet spring turns the cam.
4. As the cam rotates, the head moves up and down and program is selected.

Automatic selection

If the sensing foil attached to the cartridge tape, the plunger functions when the sensing switch is closed by the sensing foil, thereby selecting program can be made automatically.

PRESSURE OF PRESSURE ROLLER

Instruments required:

Standard cartridge for measuring of pressure roller, spring gauge.

Measuring figure:

Refer to fig. 6.

Measuring method:

Insert the standard cartridge in the tape recorder, and take the measurement by pulling it with the spring gauge.

Standard value:

1200 ± 200 gr.

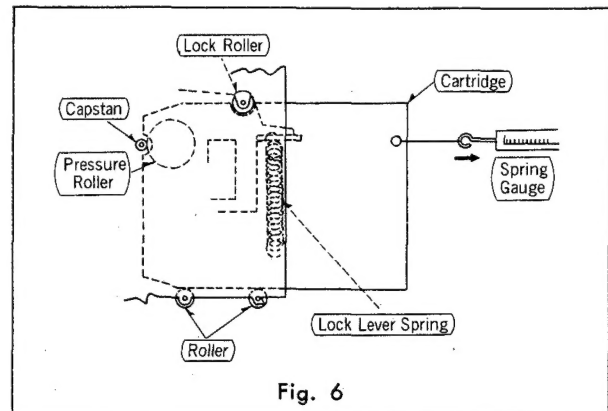


Fig. 6

HEAD PLATE ATTRACTION

Instrument required:

Spring gauge.

Measuring figure:

Refer to fig. 7.

Measuring method:

Place the set into the mode of program 1, and take the measurement by pushing it downward with the spring gauge.

Standard value:

110 ± 20 gr.

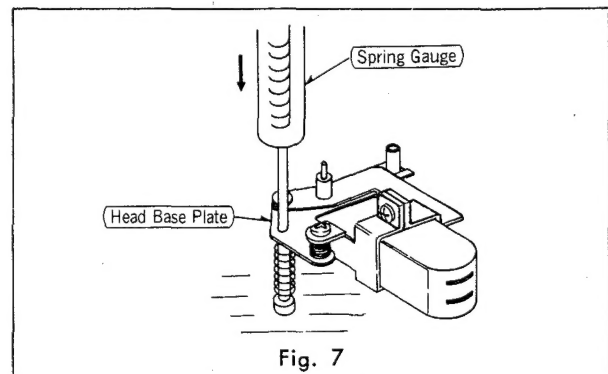
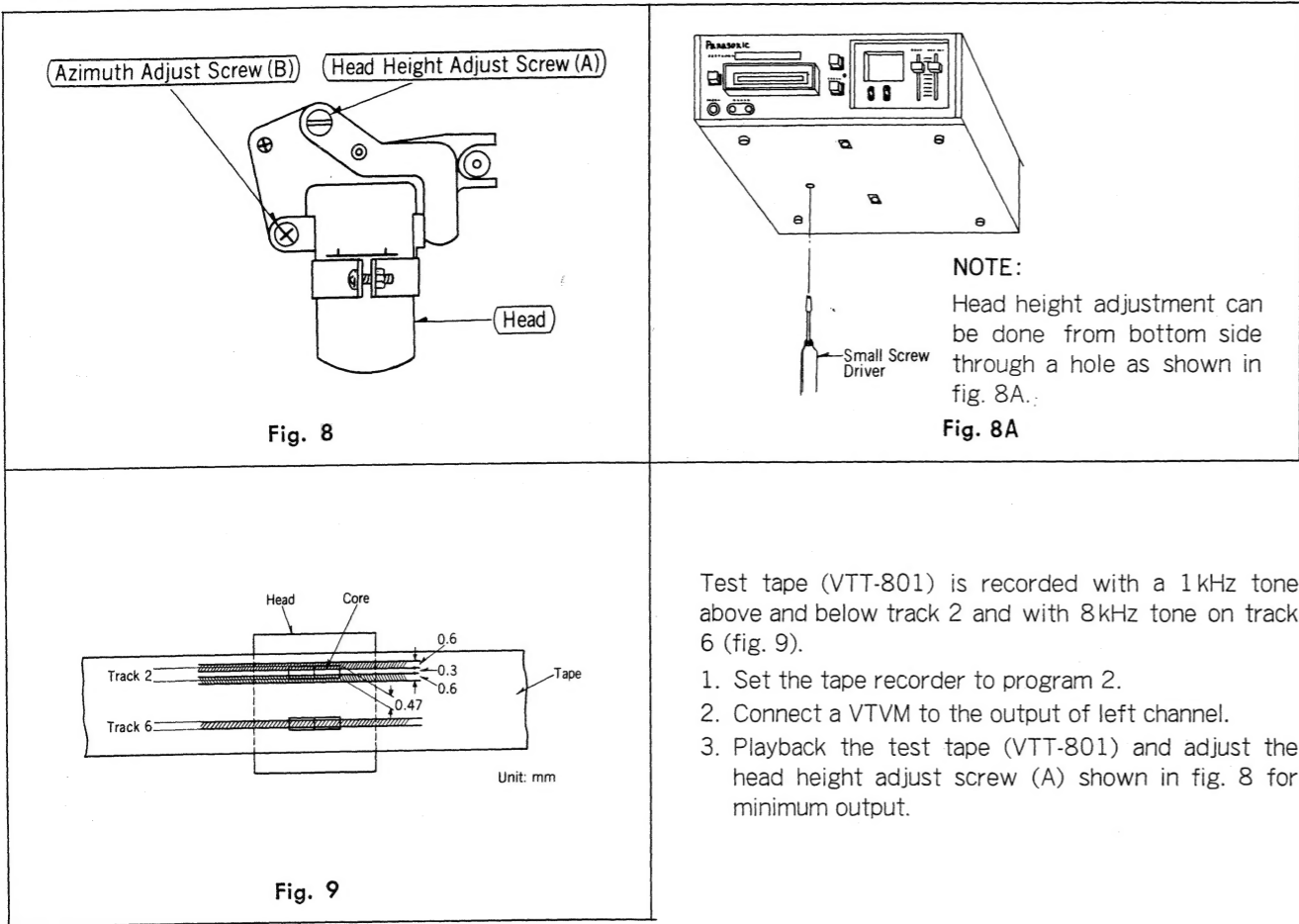


Fig. 7

AMPLIFIER ADJUSTMENTS

HEAD HEIGHT ADJUSTMENT

Instruments required: Height and azimuth test tape (VTT-801), VTVM.



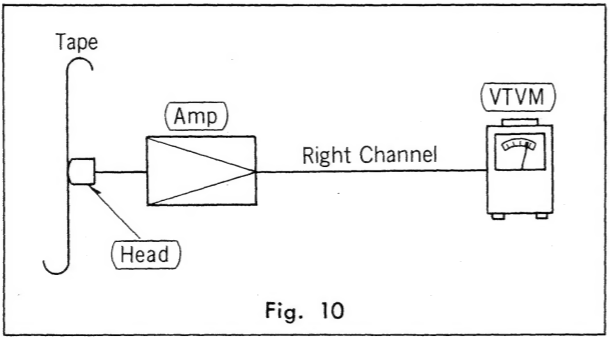
Test tape (VTT-801) is recorded with a 1kHz tone above and below track 2 and with 8kHz tone on track 6 (fig. 9).

1. Set the tape recorder to program 2.
2. Connect a VTVM to the output of left channel.
3. Playback the test tape (VTT-801) and adjust the head height adjust screw (A) shown in fig. 8 for minimum output.

AZIMUTH ADJUSTMENT

Instruments required:
Test tape (VTT-801), VTVM.

1. Set the tape recorder to program 2.
2. Connect a VTVM to the output of right channel.
3. Playback the test tape (VTT-801) and adjust the azimuth adjust screw (B) shown in fig. 8 so that the reading of the VTVM becomes maximum.



CROSSTALK ADJUSTMENT

Test tape (VTT-804) has 400Hz on channels 1, 3, 5 and 7, and no signal on channels 2, 4, 6 and 8.

1. Play each channel and measure the power ratio, using the VTVM, between each odd and even num-

bered track.
It should be at least 55 dB.

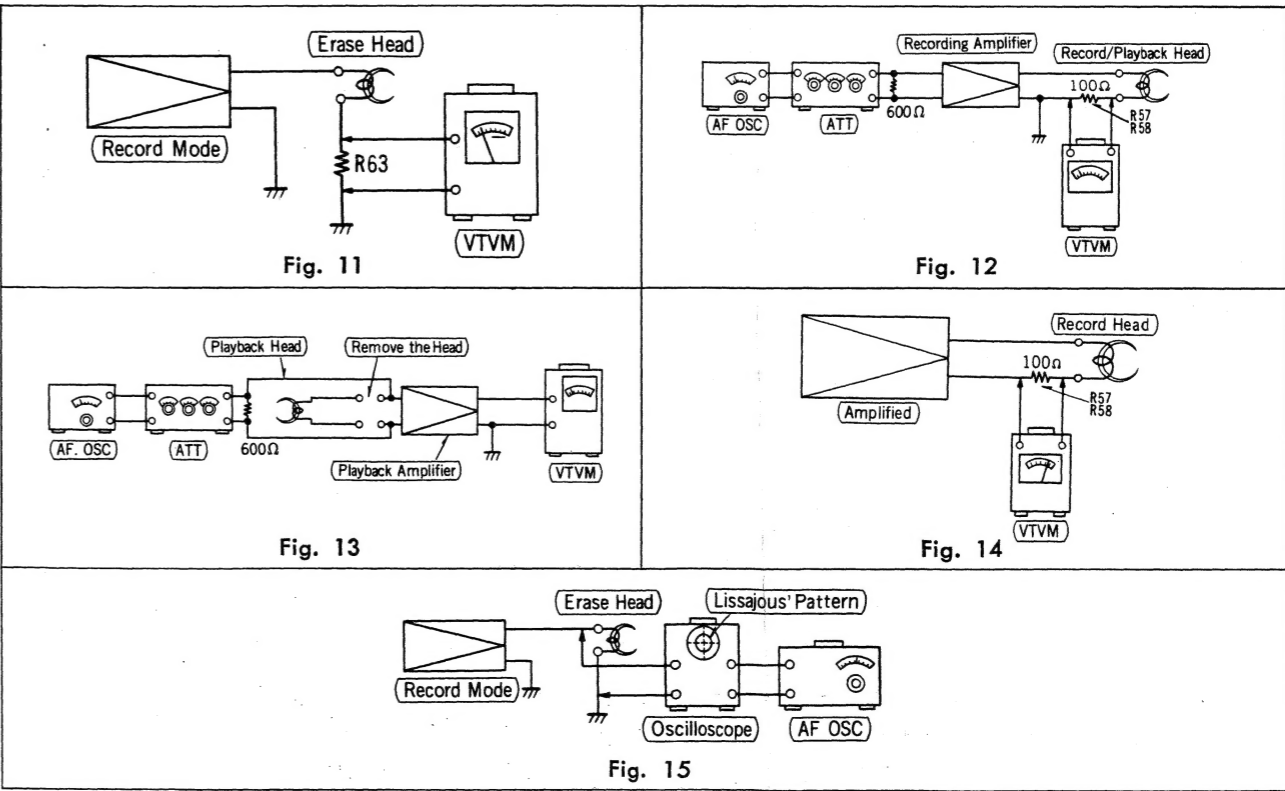
2. If the ratio is out of tolerance, repeat the azimuth and height adjustments.

ELECTRICAL ADJUSTMENTS

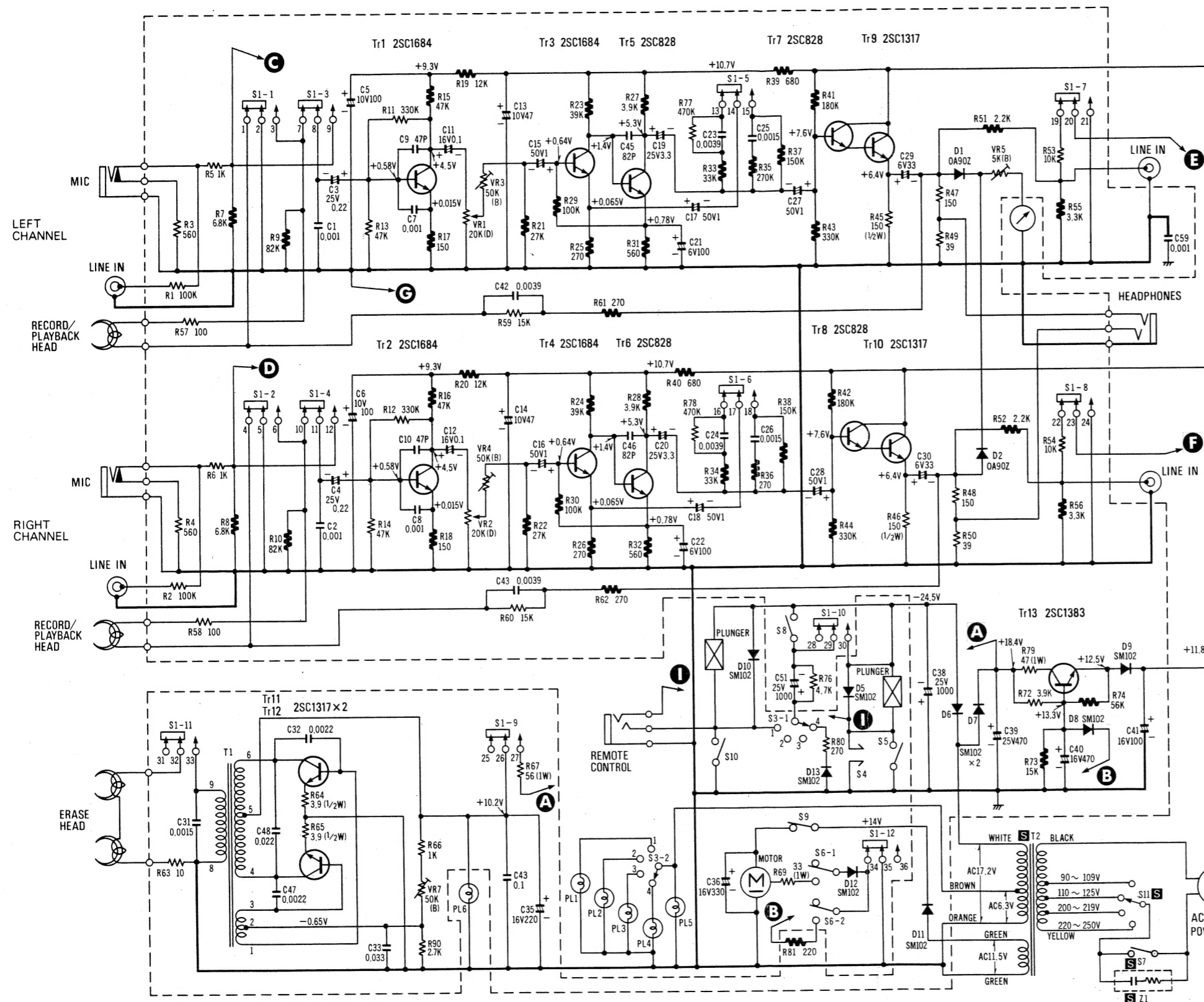
Measurement condition: Voltage.....120V Volume control.....Maximum

Instruments required: VTVM, AF OSC, oscilloscope, ATT, resistors (600Ω).

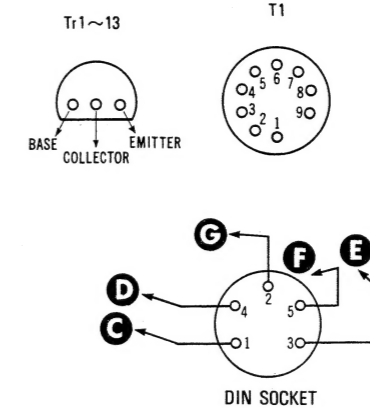
ITEM	SIGNAL SOURCE CONNECTION	OUTPUT CONNECTION	MODE	ADJUSTMENT	SPEC.	REMARKS
Adjustment of erase current.	—	VTVM to both ends of R63 (10Ω) as shown in fig. 11.	Record	VR7	$8 \pm 0.5 \text{ mA}$	Set volume control to minimum.
Test of recording level.	1 kHz MIC $-71 \pm 3 \text{ dB}$ LINE IN $-26 \pm 4 \text{ dB}$	VTVM to both ends of R57 (left CH), R58 (right CH). See fig. 12.	Record	—	$58 \mu\text{A}$ (head current)	Stop the bias oscillation by unsoldering wire A as shown on printed circuit board (page 6).
Test of playback amplifier gain.	500 Hz $-65 \pm 4 \text{ dB}$ as shown in fig. 13.	VTVM to LINE-OUT terminal.	Playback	—	0.6 V	—
Adjustment of record bias current.	—	VTVM to both ends of R57 (left CH), R58 (right CH). See fig. 14.	Record	—	1 mA	Set volume control to minimum.
Test of oscillation frequency.	—	Oscilloscope with AF OSC to both ends of erase head as shown in fig. 15.	Record	—	$40 \pm 5 \text{ kHz}$	Adjust the AF OSC to obtain a circular and stationary lissajous' pattern on oscilloscope. The oscillation frequency is indicated by the scale of the AF OSC.



SCHEMATIC DIAGRAM MODEL RS-805US

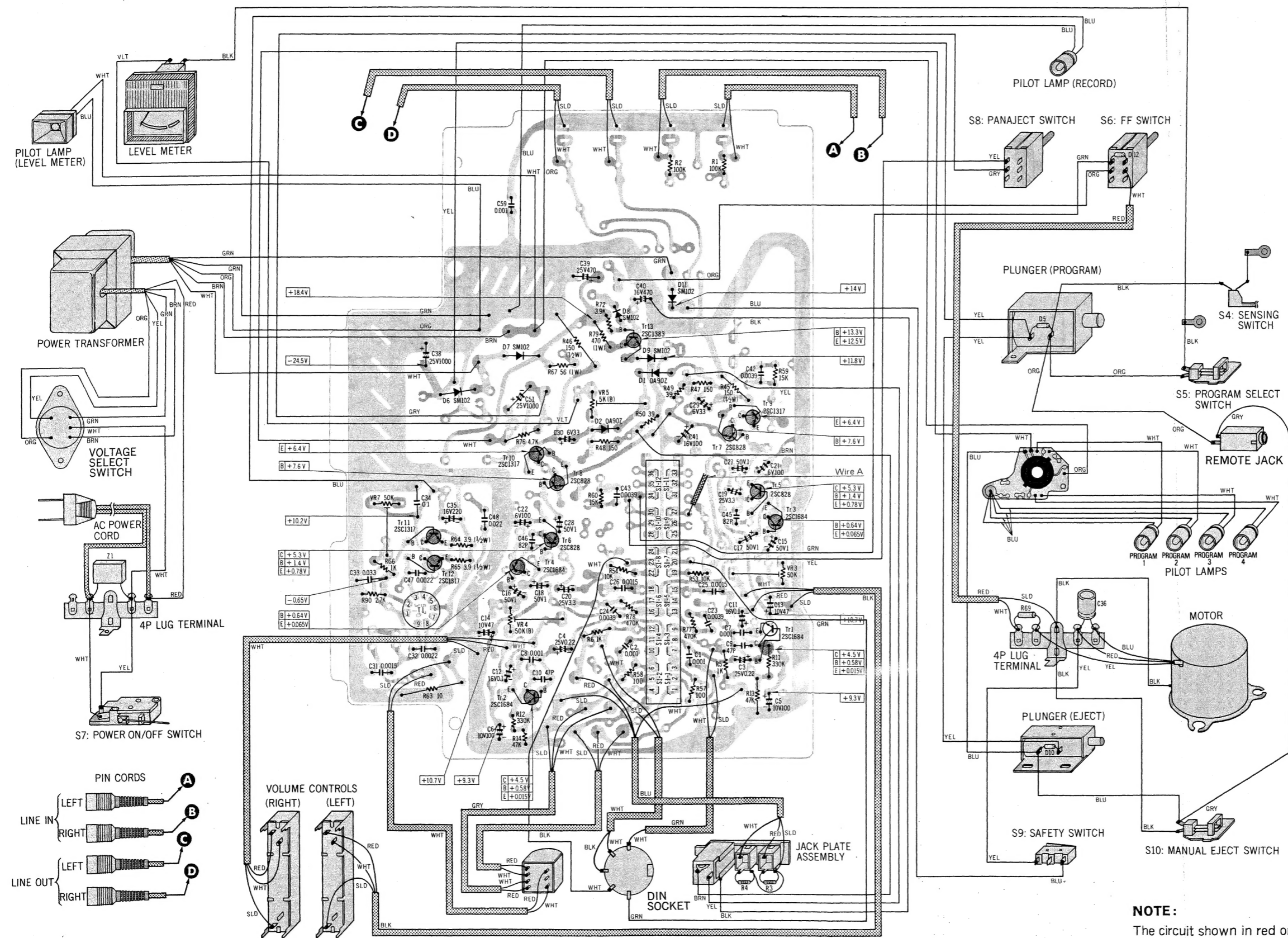


TERMINATIONS (BOTTOM VIEW)



- NOTE:**
1. S1-1~S1-12 Record/playback select switch (shown in playback position).
 2. S3-1, S3-2 Program indication switch.
 3. S4 Sensing switch.
 4. S5 Program select switch.
 5. S6-1, S6-2 Playback/fast forward select switch (shown in playback position).
 6. S7 Power ON/OFF switch (ON position when record button is pressed or cartridge is inserted).
 7. S8 Panaject switch.
 8. S9 Safety switch.
 9. S10 Eject switch.
 10. S11 Voltage select switch.
 11. VR1, 2 Volume control.
 12. VR3, 4 Playback gain adjustment VR.
 13. VR5 Level indicator adjustment VR.
 14. VR7 Erase current adjustment VR.
 15. Resistor symbols made thick show printed type resistors.
 16. Resistor values are in ohms (Ω), 1/4 watt unless specified otherwise. K=1,000 Ω .
 17. Capacitor values are in microfarads (μ F) unless specified otherwise. P=Pico-farads.
 18. All measurements are under no signal conditions with volume at minimum position. Use VTVM for voltage measurements.

WIRING CONNECTION DIAGRAM MODEL RS-805US



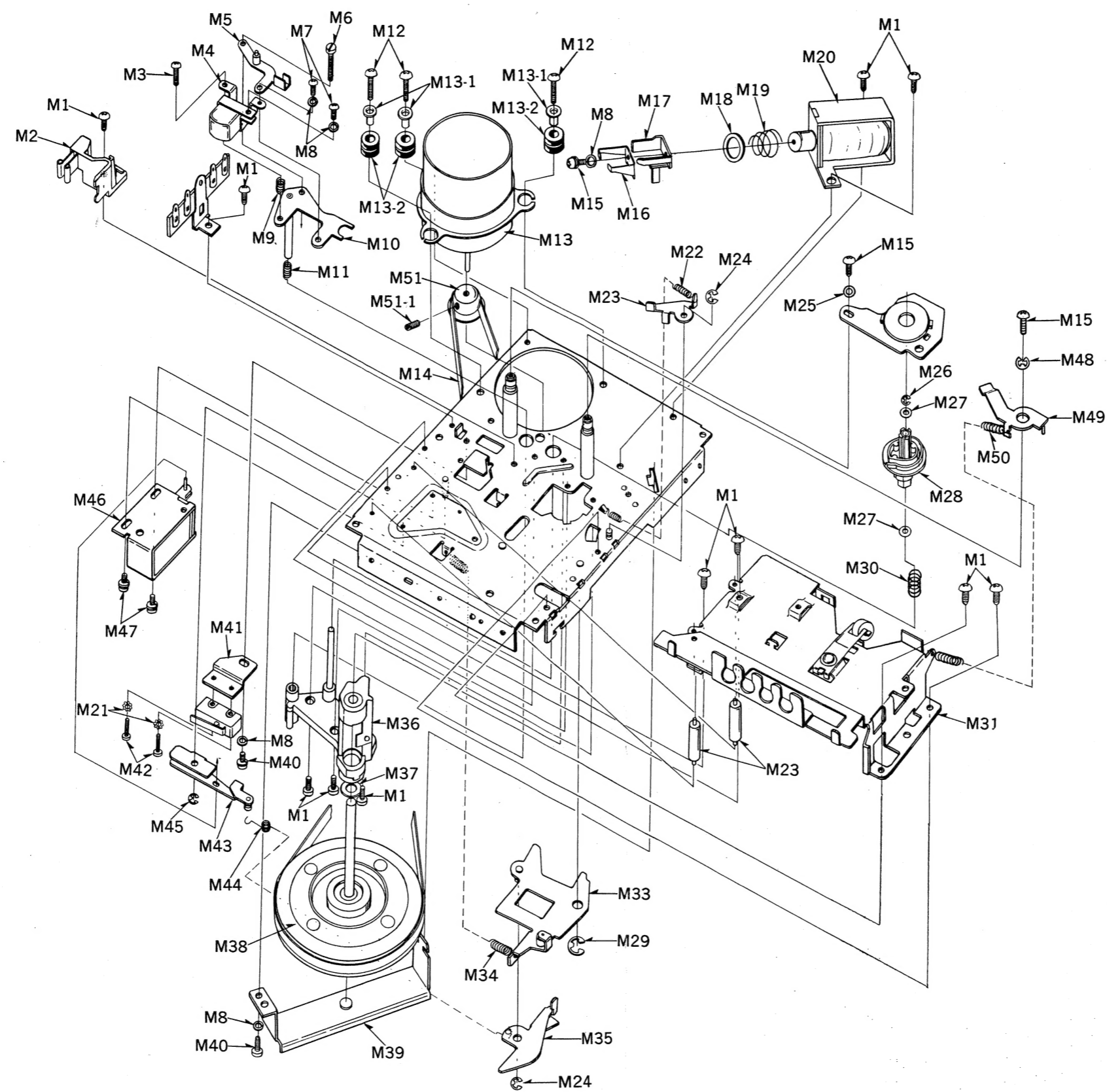
NOTE:

BLK.....Black
 BLU.....Blue
 BRN.....Brown
 GRY.....Gray
 GRN.....Green
 L.BLU ...Light Blue
 NILNo Color Mark
 ORG.....Orange
 PNK.....Pink
 RED.....Red
 SLD.....Shield Wire
 VLT.....Violet
 WHT ...White
 YEL.....Yellow

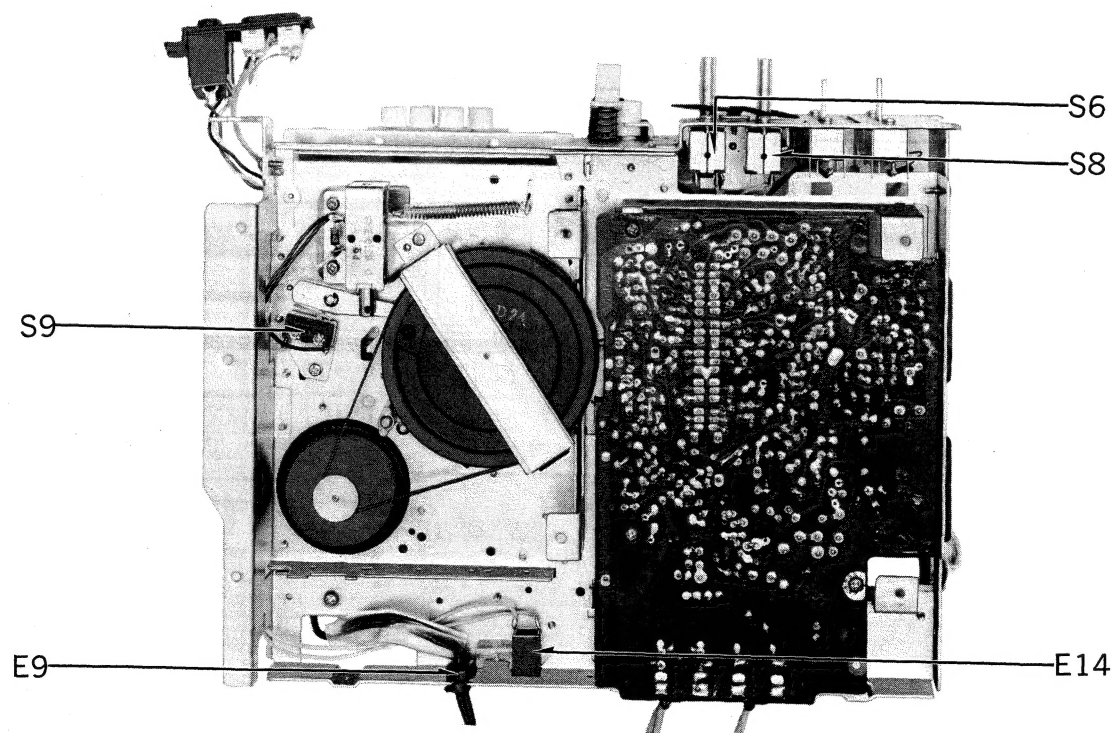
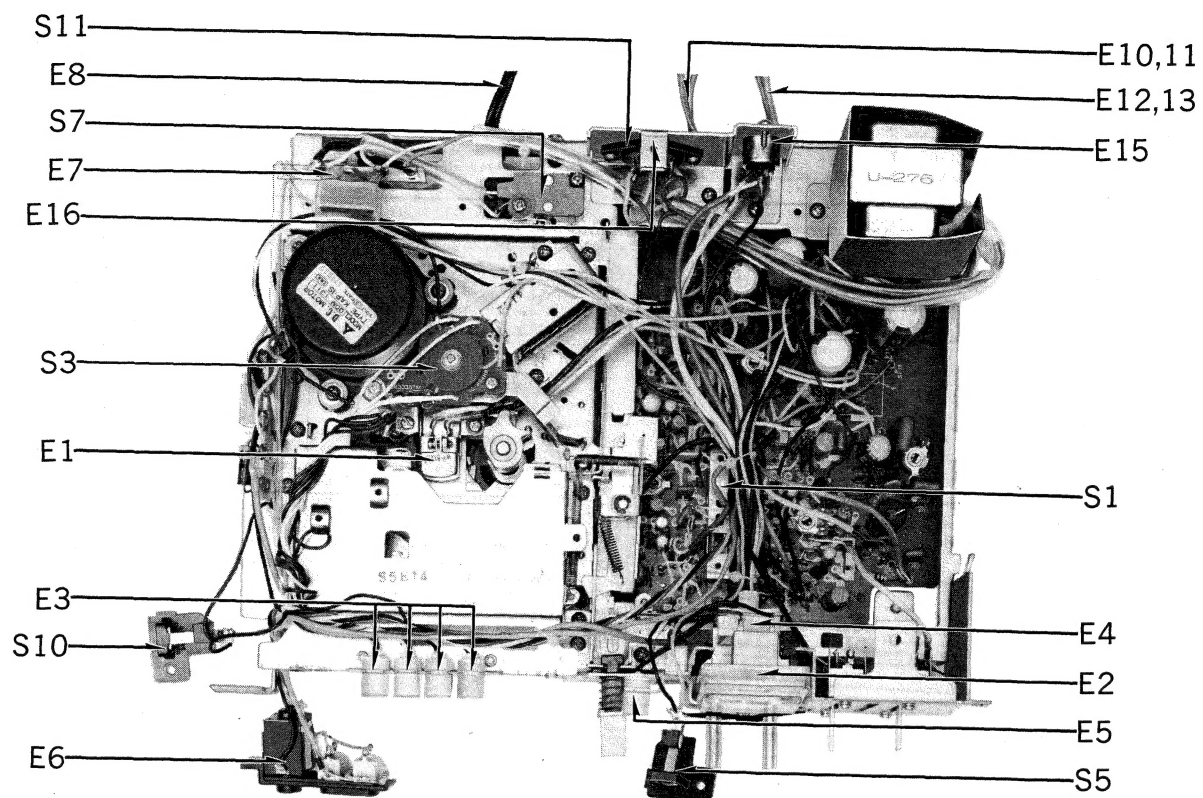
NOTE:

The circuit shown in red on the conductor is B circuit.
 Values indicated in are DC voltages between the chassis and electrical parts.

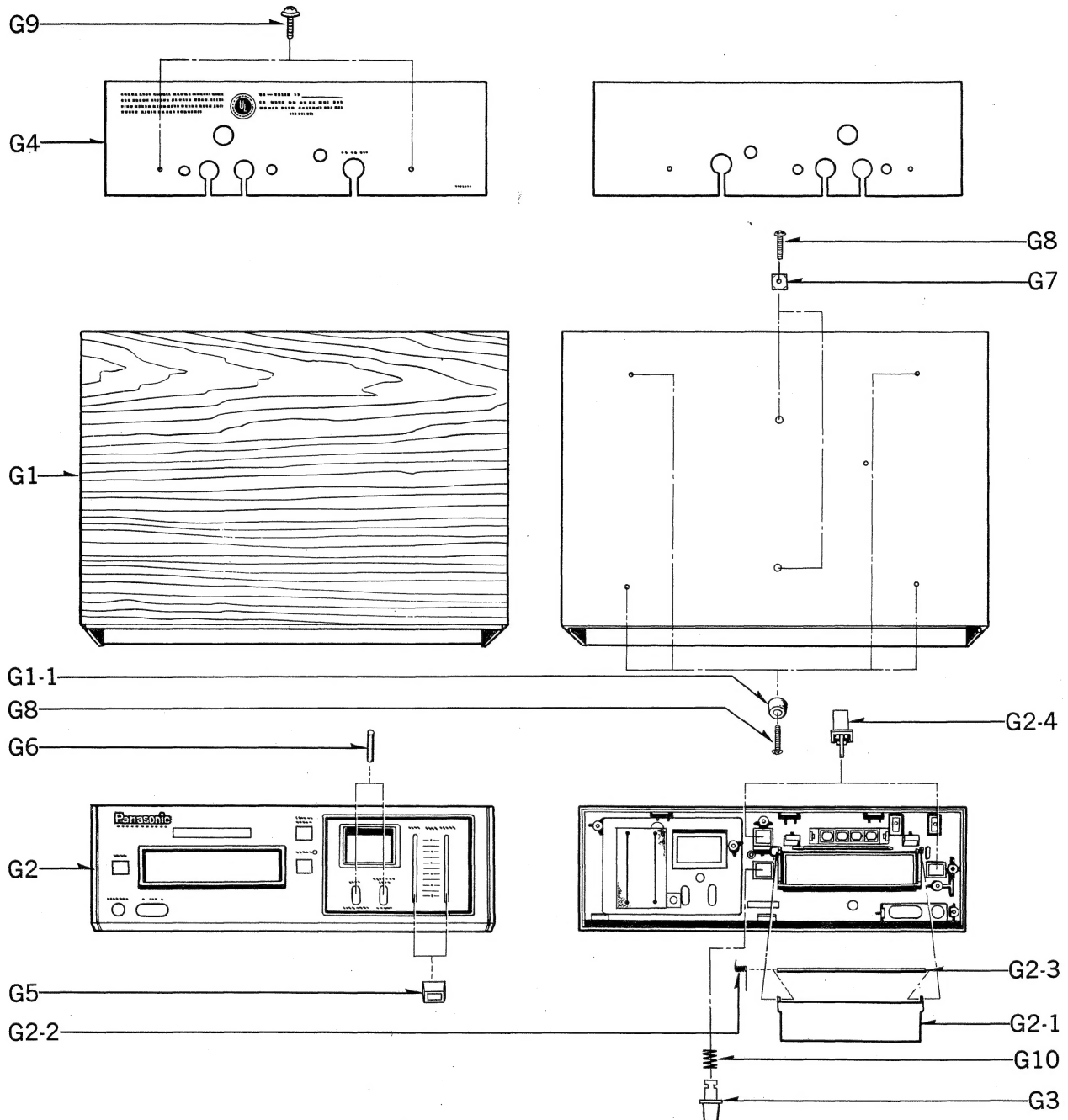
EXPLODED VIEWS

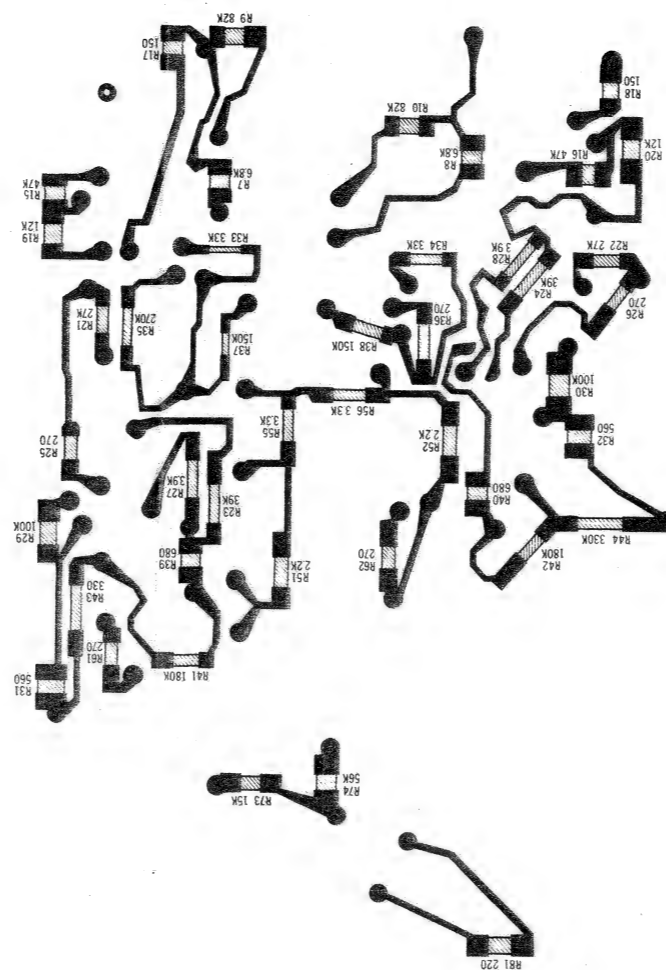


ELECTRICAL PARTS LOCATION



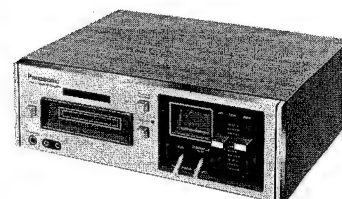
CABINET PARTS





REPLACEMENT PARTS LIST

MODEL RS-805US (Panasonic)



ATTENTION:

SAFETY indicated that only parts specified by the manufacturer be used for replacement in critical circuits.

This is the parts list for PX.

RS-805US

Ref. No.	Description	Part No.	Per Set (Pcs.)		Note
	<u>MECHANICAL PARTS</u>				
M1	Tapping Screw $\oplus 3 \times 8$	XTB3+8B	12		
M2	Tape Guide Unit (with S3)	QXZ0025	1		
M3	Screw $\ominus 3 \times 10$	XSN3-10S	1		
M4	Head Clamper	QMA2244	1		
M5	Head Flat Spring Unit	QXJ0101A	1		
M6	Head Height Adjust Screw	QHQ1189	1		
M7	Screw $\oplus 3 \times 6$	XSN3+6S	2		
M8	Spring Washer 3ϕ	XWA3B	5		
M9	Head Angle Adjust Spring	QBC1166	1		
M10	Head Plate Unit	QXH0179	1		
M11	Head Pressure Spring	QBC1221A	1		
M12	Tapping Screw $\oplus 3 \times 12$	XTB3+12B	3		
M13	Motor	QDM1311	1		
M13-1	Eylet	QMP1418	3		
M13-2	Rubber Cushion	QBG1349	3		
M14	Belt	QDB0177	1		
M15	Screw $\oplus 3 \times 6$	XYN3+C6	2		
M16	Ratchet Spring	QMF1611C	1		
M17	Cam Stopper	QGG0007A	1		
M18	Rubber Washer	QBW2002A	1		
M19	Plunger Spring	QBC1220	1		
M20	Plunger	QME0140	1		
M21	Lock Washer 2ϕ	XWC2B	2		
M22	Lock Holding Spring	QBT1682	1		
M23	Lock Holding Plate	QML2531	1		
M24	Stop Ring 3ϕ	XUC3FT	2		
M25	Flat Washer 3ϕ	XWG3FX	1		
M26	Stop Ring $E2\phi$	XUC2FT	1		

Ref. No.	Description	Part No.	Per Set (Pcs.)	Note
M27	Tetoron Washer	QBJ3099	2	
M28	Cam	QMD0011	1	
M29	Stop Ring E4φ	XUC4FT	1	
M30	Back Tension Spring	QBCT0005	1	
M31	Guide Plate Unit	QXH0180C	1	
M32	Roller	QDP1547	2	
M33	Lock Lever-2 Unit	QXL0775	1	
M34	Lock Lever Spring	QBT1686M	1	
M35	Lock Lever-1 Unit	QXL0824	1	
M36	Flywheel Shaft Retainer Unit	QXM0134A	1	
M37	Poly Washer	QBJ3217	1	
M38	Flywheel	QXF0105	1	
M39	Flywheel Retainer Unit	QXA0203	1	
M40	Screw $\oplus 3 \times 5$	XSN3+5	1	
M41	Switch Angle	QMH1132	1	
M42	Screw $\oplus 2 \times 10$	XSN2+10	2	
M43	Eject Lever Unit	QXL0720A	1	
M44	Eject Spring	QBN1314A	1	
M45	Stop Ring E2.5φ	XUC25FT	1	
M46	Plunger	QME0129C	1	
M47	Screw $\oplus 3 \times 5$	XYN3+C5S	3	
M48	Stop Ring E5φ	XUC5FT	1	
M49	Lamp Lever Assembly	QXL0795	1	
M50	Lamp Lever Spring	QBT1685	1	
M51	Motor Pulley	QXP0512	1	
M51-1	Motor Pulley Set Screw	XXE3D5FZS	1	
<u>RESISTORS</u>				
R1, 2	Carbon Resistor	100 KΩ 1/4 W	ERD14VJ104	2
R3, 4	”	560Ω 1/4 W	ERD14VJ561	2
R5, 6, 66	”	1 KΩ 1/4 W	ERD14VJ102	3
R11, 12	”	330 KΩ 1/4 W	ERD14VJ334	2
R13, 14	”	47 KΩ 1/4 W	ERD14VJ473	2
R45, 46	Solid Resistor	150Ω 1/2 W	ERC12GM151	2
R47, 48	Carbon Resistor	150Ω 1/4 W	ERD14VJ151	2

Ref. No.	Description	Part No.	Per Set (Pcs.)	Note
R49, 50	Carbon Resistor 39 Ω 1/4 W	ERD14VJ390	2	
R53, 54	" 10 K Ω 1/4 W	ERD14VJ103	2	
R57, 58	" 100 Ω 1/4 W	ERD14VJ101	2	
R59, 60	" 15 K Ω 1/4 W	ERD14VJ153	2	
R63	" 10 Ω 1/4 W	ERD14VJ100	1	
R64, 65	Wire-wound Resistor 39 Ω 1/2 W	ERM12PK3R9	2	
R67	Solid Resistor 56 Ω 1 W	ERC1GM560	1	
R69	" 33 Ω 1 W	ERC1GM330	1	
R72	Carbon Resistor 3.9 K Ω 1/4 W	ERD14VJ392	1	
R76	" 47 K Ω 1/4 W	ERD14VJ472	1	
R77, 78	" 470 K Ω 1/4 W	ERD14VJ474	2	
R79	Solid Resistor 47 Ω 1 W	ERC1GM470	1	
R80	Carbon Resistor 270 Ω 1/4 W	ERD14VJ271	1	
R90	" 2.7 K Ω 1/4 W	ERD14VJ272	1	
<u>VARIABLE RESISTORS</u>				
VR1, 2	Variable Resistor 20 K Ω (D)	EVA72AA00D24	2	
VR3, 4, 7	Semi-fixed Variable Resistor 50 K Ω (B)	EVLS3AA00B54	3	
VR5	" 5 K Ω (B)	EVLS3AA00B53	1	
<u>CAPACITORS</u>				
C1, 2	Ceramic Capacitor 0.001 μ F	ECKD1H102KB	2	
C3, 4	Electrolytic Capacitor 0.22 μ F	ECEA25VR22M	2	
C5, 6	" 100 μ F	ECEA10V100L	2	
C7, 8, 59	Ceramic Capacitor 0.001 μ F	ECKD1H102PF2	3	
C9, 10	" 47 pF	ECCD1H470K	2	
C11, 12	Electrolytic Capacitor 0.1 μ F	ECEA50ZR1	2	
C13, 14	" 47 μ F	ECEA10V47L	2	
C15, 16, 17, 18, 27, 28	" 1 μ F	ECEA50V1L	6	
C19, 20	" 3.3 μ F	ECEA25V3R3L	2	
C21, 22	" 100 μ F	ECEA6V100L	2	
C23, 24, 42, 43	Mylar Capacitor 0.0039 μ F	ECQM05392MZ	4	
C25, 26, 31	" 0.0015 μ F	ECQM05152MZ	3	
C29, 30	Electrolytic Capacitor 33 μ F	ECEA6V33L	2	
C32, 47	Ceramic Capacitor 0.0022 μ F	ECKD1H222KB	2	

Ref. No.	Description	Part No.	Per Set (Pcs.)	Note
C33	Mylar Capacitor 0.033 μ F	ECQM05333MZ	1	
C34	" 0.1 μ F	ECQM05104MZ	1	
C35	Electrolytic Capacitor 220 μ F	ECEA16V220L	1	
C36	" 330 μ F	ECEA16V330L	1	
C38	" 1000 μ F	ECEA25V1000L	1	
C39, 51	" 470 μ F	ECEA25V470L	2	
C40	" 470 μ F	ECEA16V470L	1	
C41	" 100 μ F	ECEA16V100L	1	
C45, 46	Ceramic Capacitor 82 pF	ECCD1H820K	2	
C48	Mylar Capacitor 0.022 μ F	ECQM05223MZ	1	
<u>COMBINATION PARTS</u>				
Z1	CR Combination Part SAFETY	QCR0008T	1	
<u>TRANSISTORS</u>				
Tr1, 2, 3, 4	Transistor	2SC1684	4	
Tr5, 6, 7, 8	"	2SC828	4	
Tr9, 10, 11, 12	"	2SC1317	4	
Tr13	"	2SC1383	1	
<u>DIODES</u>				
D1, 2	Diode	OA90Z	2	
D5, 6, 7, 8, 9, 10, 11, 12, 13	"	SM102	9	
<u>TRANSFORMERS</u>				
T1	Oscillator Transformer	QLB0170S	1	
T2	Power Transformer SAFETY	QLPN30IKH	1	
<u>SWITCHES</u>				
S1	Slide Switch (Record/Playback)	QSS1192	1	
S3	Rotary Switch (Program Indication)	QSR0030TM	1	
S4	Sensing Switch (Interlock with M2)	—	(1)	
S5	Leaf Switch (Program Selector)	QSB0211	1	
S6	Lever Switch (Fast Forward Selector)	QST0021S	1	
S7	Micro Switch (Power ON/OFF) SAFETY	QSM0062A	1	

Ref. No.	Description	Part No.	Per Set (Pcs.)		Note
S8	Lever Switch (Panaject)	QST0021S	1		
S9	Micro Switch (Safety Switch)	QSM0040A	1		
S10	Leaf Switch (Eject)	QSB0211	1		
S11	Rotary Switch (Voltage Select) SAFETY	QSR0004B	1		
	<u>ELECTRICAL PARTS</u>				
E1	Head	WY812AZ	1		
E2	Level Meter	QSL1030LM	1		
E3	Pilot Lamp	XAMQ11P300	4		
E4	"	XAMQ16P300	1		
E5	"	XAMQ27P300	1		
E6	Jack Plate Assembly	QTS0264HM	1		
E7	4P Lug Terminal	QJT4012	2		
E8	AC Power Cord SAFETY	QFC1041	1		
E9	Heyco Bushing	QTD1129	3		
E10	Pin Cord-L (LINE-IN)	QFC2096	1		
E11	Pin Cord-R (LINE-IN)	QFC2097	1		
E12	Pin Cord-L (LINE-OUT)	QFC2066A	1		
E13	Pin Cord-R (LINE-OUT)	QFC2067A	1		
E14	Remote Jack	QJA0134A	1		
E15	Din Socket	QJS0747	1		
E16	Din Socket Holding Angle	QMA2198	1		
	<u>CABINET PARTS</u>				
G1	Main Body Case Assembly	QKW1277	1		
G2	Panel Assembly	QYP0546	1		
G2-1	Cartridge Lid	QKF1447	1		
G2-2	Cartridge Lid Spring	QBN1197	1		
G2-3	Cartridge Lid Shaft	QMN1684	1		
G2-4	Button Assembly	QXB0193H	2		
G3	"	QXB0208H	1		
G4	Back Board	QKS1202	1		
(G4)	Back Board	QKS1203	1		Europe PX only
G5	Volume Knob Assembly	QYT0364	2		
G6	Lever Knob	QGT1242	2		

